ENERGY POLICY UPDATE

November 3, 2014

Governor's Office of Energy Policy

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

UPCOMING EVENTS

2014

As the World Trades Forum
Nov. 6 Phoenix, AZ

Women in Energy Symposium
Nov. 12-14 Phoenix, AZ

Governor's Celebration of Innovation
Nov. 13 Phoenix, AZ

Western Water Conference
Nov. 13 Huntington Beach, CA

ACEEE Intelligent Efficiency Conference
Nov. 16-18 San Francisco, CA

Renewable Energy Markets Conference
Dec. 2-4 Sacramento, CA

White House Tribal Nations Conference
Dec. 3 Washington, DC

Solar Development on Landfills and Brownfields
Dec. 8-9 Chicago, IL

ITEP Course: Greening Tribal Operations and Facilities
Dec. 9-11 San Diego, CA

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

APS Parent Reports 8 Percent Rise in Profit
[Arizona Republic, Nov. 1] Pinnacle West Capital Corp., the parent company of Arizona Public Service Co., boosted its third-quarter profit almost 8 percent despite mild weather that lowered electricity demand in July, August and September. The company earned a profit of $244 million, or $2.20 per share, compared with $226.2 million, or $2.04 per share, in the same quarter a year ago. President/CEO Don Brandt said the company was able to increase profits by lowering operations and maintenance costs. That offset the mildest August weather in 20 years, based on a measure called cooling-degree days.

Energy Expo Hopes To Get Students Charged Up About Utility Jobs
[Cronkite New, Oct. 29] PHOENIX – Over the next several years, the utility industry is expected to lose about 40 percent of its workforce to retirement. In an effort to attract a new batch of prospective employees, the Arizona Science Center hosted the first annual Arizona Get Into Energy Education Expo. Hundreds of students from all over the state came to learn about the energy field and the different career opportunities it has to offer.

Kinder Morgan Places Sierrita Pipeline in Service to Provide Natural Gas to Customers in Mexico
[Business Wire, Oct. 31] HOUSTON – Kinder Morgan Energy Partners, L.P. today announced that the fully subscribed Sierrita Pipeline has begun service. The approximately 60-mile, 36-inch diameter pipeline provides approximately 200 million cubic feet per day of firm transportation capacity and extends from El Paso Natural Gas' existing south mainlines near Tucson, Arizona, to the U.S.-Mexico border near Sasabe, Arizona. The Sierrita Pipeline interconnects via a new international border crossing with a new natural gas pipeline in Mexico. It will help Mexico meet its environmental goals of converting existing fuel-oil-fired power generation plants to efficient, clean burning natural gas and provide natural gas for future power plants. The project was built in partnership with MGI Enterprises US LLC, a wholly owned affiliate of Pemex Gas y Petroquímica Básica, a subsidiary of Petróleos Mexicanos, the Mexican state-owned oil and gas company, and MIT Pipeline Investment Americas, Inc., a subsidiary of Mitsui & CO., LTD. "We are pleased to see the Sierrita Pipeline placed in service to provide customers in Mexico with supplies of clean, efficient natural gas," said Natural Gas Pipelines West Region President Mark Kissel. "The project created temporary jobs and future property tax benefits to Arizona and provides a means for transporting abundant, cost efficient U.S. natural gas production to Mexico. The project also represents a highly successful, multi-national cooperative effort on the part of companies whose

2015

NAHB Int'l. Builders' Show
Jan. 20-22 Las Vegas, NV

ASHRAE Winter Conference
Jan. 24-28 Chicago, IL

Getting to ZERO Nat'l. Forum
Feb. 1-3 Washington, DC

NASEO Energy Policy Outlook Conference 2015
Feb. 3-6 Washington, DC

Solar Power Generation USA
Feb. 4-5 San Diego, CA

Energy, Utility & Environment Conference (EUEC) 2015
Feb. 16-18 San Diego, CA

Sustainability Solutions Festival
Feb. 16-21

GreenBiz 2015
Feb. 17-19 Phoenix, AZ

GreenBiz Forum 2015
Feb. 17-19 Phoenix, AZ

2015 Sustainability Solution Festival
Feb. 17-22 Phoenix, AZ

Natural Gas Vehicles + Infrastructure
Mar. 10-11 Phoenix, AZ

Solar Summit 2015
Apr. 14-15 Phoenix, AZ

Alternative Clean Transportation (ACT) Expo
May 4-7 Dallas, TX

Solar Power Generation Mexico
May 19-20
World Trade Center, Mexico

Energy Efficiency Finance Forum
May 31-Jun. 2 San Francisco, CA

Green Building Lecture Series
Granite Reef Senior Center
Scottsdale, AZ

ASHRAE Annual Conference
Jun. 27-Jul.1 Atlanta, GA

RES Las Vegas
Mar. 9-12 Las Vegas, NV

ACEEE Summer Study on Energy Efficiency in Industry
Aug. 4-6 Buffalo, NY

ACEEE National Conference on Energy Efficiency as a Resource
Sep. 20-22 Little Rock, AR

parent corporations are headquartered in the U.S., Mexico, and Japan."

Photovoltaic System Dedicated at UA Tech Park

[Arizona Daily Star, Oct. 29] The University of Arizona Tech Park capped off the first phase of its massive solar-energy test yard Wednesday with the dedication of a 1.1-megawatt concentrating photovoltaic system built by California-based Cogenra Solar. UA officials also announced an expansion of the Solar Zone — which now provides enough solar power for more than 3,200 homes — in a second phase still in the planning stages. The system inaugurated Wednesday, which will supply Tucson Electric Power Co., is the UA test site's first trough-type concentrating PV system. It also is the biggest and first utility-scale project for Cogenra, which has installed about 40 commercial-scale systems.

Plan Emerges for Fourth Unit at Cholla Power Plant

[Arizona Republic, Oct. 12] When Arizona Public Service Co. announced in September that the company would seek to shut down part of the Cholla Power Plant in Joseph City, there was a big hole in the plan. APS had a plan for three of the four units. The No. 4 unit at the plant is owned by PacifiCorp/Rocky Mountain Power, which provides power in Oregon, Washington, California, Utah, Wyoming and Idaho. At the time, PacifiCorp didn't know what to do with its generator. Now it does. PacifiCorp said in a Sept. 29 filing to Oregon regulators that the company will try to negotiate a deal with the Environmental Protection Agency to stop burning coal at the unit by 2025 and either convert to natural gas or retire the unit after that. The need for action stems from a 2010 notice from the Environmental Protection Agency that Units 2 through 4 at the plant need pollution controls. APS has proposed closing the No. 2 unit at the coal-fired plant in 2016, and the Nos. 1 and 3 units could convert to natural gas or close in 2025 when the plant's coal contract expires. It's going to be cheaper for APS to shut down No. 2 and convert Nos. 1 and 3 to natural gas than to spend an estimated $350 million on pollution controls, APS officials said.

SRP: Impossible To Meet EPA Coal Edict on Time

[Arizona Republic, Oct. 17] Salt River Project officials say it will be impossible to meet the EPA's proposed carbon rules for power plants in the time frame the regulators suggest, and that the plan will require significant new infrastructure. The Environmental Protection Agency last summer issued the first proposed rules for regulating emissions from existing power plants that contribute to global warming. They aim to reduce carbon emissions from power plants 30 percent by 2030, although individual state targets vary widely. Arizona has the second-highest target among all the states, with the EPA expectation that the state could reduce the carbon intensity of its power generation 52 percent by 2030. The state also faces an interim target in 2020. "We are really concerned with the interim and final targets for Arizona," said Kelly Barr, SRP's senior director of environmental management, policy and compliance, who updated the municipal utility's board of directors on the matter this week. One issue with the EPA proposal is it divides the states, but many utilities in the West rely on power plants in multiple states, spreading their interests.

TEP Plan Would Let Customers Donate to Solar on Habitat Homes

[Arizona Daily Star, Nov. 1] State regulators are poised to approve a program that will allow Tucson Electric Power Co. ratepayers to voluntarily donate to solar-energy installations on homes constructed by Habitat for Humanity. The Voluntary Solar Contribution Program, expected to be approved by the Arizona Corporation Commission at its open meeting this week, would start Jan. 1 and allow TEP customers, or anyone, to make voluntary solar contributions through the Arizona Community Foundation, a tax-exempt nonprofit. The Corporation Commission required TEP to propose the program in approving the utility's 2014 renewable-energy compliance plan in October 2013. The program was proposed in an amendment by Commissioner Bob Burns. The donations will be used to install solar panel systems on new residential single-family homes constructed by the Arizona chapter of Habitat for Humanity International. Arizona Community Foundation will hold and manage the funds in a tax-exempt, irrevocable fund and administer the program, with TEP picking up the administrative costs. Donations will be tax-deductible. The solar systems will be installed as money becomes available to purchase and install each warrantied system and maintain it for five years.

ALTERNATIVE ENERGY & EFFICIENCY

30% of Building Managers Use No Energy Savings Technology, Says Survey

[Energy Manager Today, Oct. 28] Daintree Networks and CoR Advisors have released findings from their "State of Building Energy Management Survey" distributed to building owners, managers and other industry professionals. The survey found that although about 69 percent of the respondents said they were using some technology to control and manage their building energy consumption, most are using basic technology such as local sensors and efficient light

World Energy Engineering Congress (WEEC)
Sep. 30 – Oct. 2 2015
Orlando, FL

ASU Sustainability Series Events

Green Building Lecture Series
Scottsdale, AZ

UPCOMING INTERNATIONAL BUSINESS EVENTS

Global Chamber® Launch - Nov. 5 in Phoenix
Oh my, it's coming! Watch for the new website and a whole new way of getting connected with global business. More info.

Global Chamber® Tucson Launch - Nov. 6 in Tucson
Also coming to Tucson, introduced by Mayor Rothschild. More info.

As the World Trades Forum
Nov. 6 in Phoenix

Arizona Border Economic Summit
Dec. 2 Phoenix, AZ

fixtures. Over 30 percent are not using any technology at all, according to the survey. Of the facility managers who are using a technology, most are doing it with efficient lighting (usually LEDs), lighting controls, legacy building automation systems and energy monitoring software.

Carmakers Prepare To Shift to Hydrogen Fuel Cells
[LA Times, Oct. 26] Concerned about slow sales of electric cars and plug-in hybrids, automakers are increasingly betting the future of green cars on hydrogen fuel cell technology. Even Toyota Motor Corp., maker of the popular Prius gas-electric hybrid, will use hydrogen instead of batteries to power its next generation of green vehicles. "Today, Toyota actually favors fuel cells over other zero-emission vehicles, like pure battery electric vehicles," said Craig Scott, the company's national manager of advanced technologies. "We would like to be still selling cars when there's no more gas. And no one is coming to our door asking us to build a new electric car." But even hydrogen's most ardent proponents agree the technology faces enormous hurdles. Like electric cars, hydrogen fuel cell vehicles are expensive. So is the infrastructure to refuel them. Car companies have been slow to put hydrogen fuel cell vehicles on the market in part because of the lack of fueling stations. Operators of fueling stations, in turn, won't build more retail outlets unless they see more fuel cell car sales. Dan Poppe is among the few early investors in hydrogen stations. Wearing a hard hat and coveralls at his Burbank hydrogen station, Poppe chews on the edges of his mustache and worries about his future.

FERC: 140 MW of Biomass Capacity Added in First 9 Months of 2014
[Biomass Magazine, Oct. 30] The Federal Energy Regulatory Commission Office of Energy Projects has published its Energy Infrastructure Update for September 2014, reporting the U.S. added 38 biomass power generation units during the first nine months of the year. Together, those units have a combined capacity of 140 MW. During the same period of last year, the U.S. added 78 biomass units with a combined capacity of 312 MW. During the first three quarters of this year, the U.S. added 8,860 MW of additional power generation capacity. Renewable energy has comprised a large portion of those additions. In addition to the biomass units, the U.S. added seven hydro units with 141 MW of capacity, along with 28 wind units with a combined 1,614 MW of capacity. An additional five geothermal steam units were added with a combined 32 MW of capacity, along with 187 solar units with a combined 1,671 MW of capacity. The U.S. also added 7 MW Of capacity from other sources.

Portland Company Looks To Make (Energy From) Waves in Hawaii
[Portland Business Journal, Oct. 30] Portland-based Northwest Energy Innovations is splitting $10 million in funding from the U.S. Department of Energy to deploy its wave energy technology at a Navy site in Hawaii. Northwest Energy Innovations together with Sacramento-based Ocean Energy USA of Sacramento will build full-scale models of their devices and deploy them at the new deep water test berth at the U.S. Navy's Wave Energy Test Site (WETS) off the Hawaiian coast at Kaneohe Bay. Northwest Energy Innovations will build and test a full-scale model of its Azura wave energy conversion device, which extracts energy from both the vertical and horizontal motion of waves. It previously developed a half-scale prototype for testing in 2012 at the Northwest National Marine Renewable Energy Center's ocean test site off Oregon.

U.S. Solar Panel Maker To Add 200 Jobs and Expand Its Plant
[New York Times, Oct. 30] SolarWorld Americas, the Oregon-based module manufacturer whose bitter trade dispute with China led to steep tariffs on imports from that country, announced a $10 million expansion of its plant on Thursday because of increased demand. The company, once battered by stiff competition from Chinese manufacturers that drove many American solar module makers out of business, plans to hire about 200 more workers next year and increase its module production capacity by almost 40 percent. “Many people did not think SolarWorld and U.S. manufacturing would survive — after all, solar manufacturing hasn’t exactly been a growth industry lately in the United States,” said Mukesh Dulani, the company’s president. “We have always said that we could compete with any company, domestic or foreign, on a level playing field.” The company, like others, is benefiting from increasing domestic demand for solar modules, a trend that analysts expect to continue. SolarCity, the fast-growing installer of rooftop solar systems, recently announced it was buying a start-up company and building an enormous manufacturing plant in Buffalo just to meet its own demand.

While You Were Getting Worked Up Over Oil Prices, This Just Happened to Solar
[Bloomberg, Oct. 29] Every time fossil fuels get cheaper, people lose interest in solar deployment. That may be about to change. After years of struggling against cheap natural gas prices and variable subsidies, solar electricity is on track to be as cheap or cheaper than average electricity-bill prices in 47 U.S. states -- in 2016, according to a Deutsche Bank report published

this week. That's assuming the U.S. maintains its 30 percent tax credit on system costs, which is set to expire that same year. Even if the tax credit drops to 10 percent, solar will soon reach price parity with conventional electricity in well over half the nation: 36 states. Gone are the days when solar panels were an exotic plaything of Earth-loving rich people. Solar is becoming mainstream, and prices will continue to drop as the technology improves and financing becomes more affordable, according to the report.

ENERGY/GENERAL

Average U.S. Gas Price To Drop Below $3.00 Per Gallon for the First Time Since 2010
Longest Consecutive Streak to End with Drivers Saving at Least $250 Million per Day on Gasoline
[AAA.com, Oct. 31] WASHINGTON – The national average price of gas tomorrow will drop below $3.00 per gallon for the first time since Dec. 22, 2010, ending its longest streak ever above that price, according to AAA. AAA estimates that lower gas prices are helping consumers save at least $250 million per day on gasoline compared to early summer when the national average reached $3.68 per gallon. "Consumers are experiencing 'sticker delight' as gas prices unexpectedly drop below $3.00 in much of the country," said Bob Darbelnet, CEO of AAA. "Lower gas prices are a boon to the economy just in time for holiday travel and shopping." The national average price of gas has remained more expensive than $3.00 per gallon for 1,409 consecutive days. During that 46-month period, gas prices averaged $3.52 per gallon and reached as high as $3.98 per gallon on May 5, 2011. More than 60 percent of all U.S. stations are selling gas for less than $3.00 per gallon today. Consumers can find at least one station selling gas for less than $3.00 per gallon in nearly every state. The drop below $3.00 per gallon is significant because about 40 percent of American adults believe that gasoline is "too high" when the price reaches that level, according to a AAA survey conducted in March.

Mexico's State-Owned Oil Giant, Pemex, Is in Uncharted Waters
[New York Times, Oct. 28] La Muralla Iv, GULF OF MEXICO — The computer screens lining the bubblelike control room on this giant floating platform monitor pressure levels in a narrow shaft cut through bedrock to a reservoir of valuable natural gas three miles below sea level. For six months, an international team hired by a contractor for Petróleos Mexicanos, Mexico's state-owned oil monopoly, has been drilling an exploratory well here. Now, the work is nearly done. Drill pipes are stacked like sentries. An underwater robot has been pulled back up from the deep seafloor. A wireline sensor is gathering data to determine how much oil and gas lie below. An operation like this would attract little attention in the northern part of the gulf, where dozens of deepwater platforms are part of the mosaic fueling America's energy boom. On the Mexican side, though, the search is just beginning. Pemex is counting on a future in deepwater production. But after eight years of exploratory drilling, it is still years away from producing the first barrel of oil in deep waters. Before it can, Pemex must shed its past as a lumbering state monopoly and remake itself as a streamlined company ready to compete or ally with the world's biggest firms.

Why Oil Prices Went Down So Far So Fast
[Bloomberg, Oct. 29] The reasons oil prices started sliding in June were hiding in plain sight: growth in U.S. production, sputtering demand from Europe and China, Mideast violence that threatened to disrupt supplies and never did. After three-and-a-half months of slow decline, the tipping point for a steeper drop came on Oct. 1, said Ray Carbone, president of broker Paramount Options Inc. That's when Saudi Arabia cut prices for its biggest customers. The move signaled that the world's largest exporter would rather defend its market share than prop up prices. "That, for me, was the giveaway," Carbone said in an Oct. 28 phone interview from his New York office. "Once it started going, it was relentless." The 29 percent drop since June of the international price caught traders and forecasters by surprise. After a steady buildup of supply and weakening demand, the outbreak of an OPEC price war is casting doubt on investments in new oil resources while helping the global economy, keeping inflation in check and giving motorists a break at the pump.

INDUSTRIES AND TECHNOLOGIES

DOE Driving Commercialization of Clean Energy Technology
[Fierce Energy, Nov. 3] The U.S. Department of Energy (DOE) has launched a $2.3 million pilot program to move innovative clean energy technologies from the DOE's National Laboratories into the commercial marketplace. The program, Lab-Corps, aims to better train and empower national lab researchers to successfully transition their discoveries into high-impact, real world technologies in the private sector, building on the success of the National Science Foundation's

Innovation Corps (I-Corps) model. Lab-Corps is a specialized technology accelerator and training curriculum for the national laboratories that will enable lab-based teams to gain direct market feedback on their technologies and pursue the development of startup companies, industry partnerships, licensing agreements, and other business opportunities. Six national labs have been selected to participate and, over the next year, will assemble, train, and support entrepreneurial teams to identify private sector opportunities for commercializing promising sustainable transportation, renewable power, and energy-efficiency lab technologies. Each Lab-Corps team receives comprehensive training -- which is developed, delivered and managed by the National Renewable Energy Laboratory (NREL) -- and access to commercialization resources, including technology validation and testing, facility access, techno-economic analysis, and other incubation services. Along with NREL, Brookhaven National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratory will provide support for the training.

G.M. Plans New Version of Chevrolet Volt for 2015

[New York Times, Oct. 28] DETROIT — General Motors hopes to invigorate sales of its slow-selling Chevrolet Volt by introducing a new version of the plug-in hybrid sedan next year, with more of its parts production taking place in Michigan. Mary T. Barra, G.M.'s chief, said on Tuesday that the new version of the Volt, which will have better fuel economy and driving range, is evidence of the automaker's long-term commitment to electric-vehicle technology. "It will store more energy in its battery pack, yet go further on a charge," Ms. Barra said in a speech to the Detroit Economic Club. "It will accelerate faster, and the car's generator will come from an all-new G.M. engine family and use even less fuel." G.M. will also concentrate more of its production of Volt components in Michigan, where it assembles the vehicle. Besides continuing to make the car's battery pack in the state, the company will move production of an electric-drive system from Mexico to a transmission plant in suburban Detroit, and produce its new gasoline engine in Flint. The Volt is assembled at G.M.'s last assembly plant in Detroit, Hamtramck.

Innovations In Storage Boost Renewable Energy

Because utilities can't control when the sun shines or the wind blows, it has been hard to incorporate solar and wind power into the electricity grid. But new storage technologies could soon change that.

[Christian Science Monitor, Oct. 31] Intermittency has long been considered the Achilles heel of renewable power generation. The U.S. electricity grid, after all, is largely built around big, centralized coal and nuclear power plants that can run all the time, whether demand is high or low. In contrast, grid engineers have no control over when the sun shines or when the wind blows, making it difficult for solar or wind to fully supplant the dirty-but-reliable fuels that keep the power grid humming along smoothly. That may finally be changing. Large-scale and technologically advanced energy storage projects — from massive lithium-ion battery installations in the California mountains to giant, compressed air caverns under the Utah desert – have recently been commissioned or announced. And while numerous hurdles remain — including needed improvements in reliability and safety, regulatory and market changes, and of course, cost — policy moves in many states are steadily nudging the industry forward.

New Power Inverter Could Make EVs More Powerful and Efficient

[GizMag.com, Oct. 28] A new power inverter developed at the Oak Ridge National Laboratory (ORNL) marries advances in 3D printing and wide-band semiconductor technology to deliver significantly improved performance in a smaller, lighter package. With further development, it could go a long way toward helping build electric cars that are more powerful and energy-efficient. Power inverters are an essential part of any electric vehicle, as they take the direct current stored in the battery pack and turn it into AC that feeds the motor. Making them as small and light as possible is an area well worth focusing on. Even Google's in on it, having recently instituted a US$1 million prize for the best inverter designed to take DC from solar arrays and wind turbines and convert it into AC for domestic use. Of course, reducing that footprint becomes even more important when room is at a premium, such as aboard an electric car. The inverter designed at ORNL achieves a very significant improvement in terms of power density, weight and volume. As lead investigator Dr. Madhu Chinthavali tells us, the 20 kW device that his team designed has a total volume of only around 1,500 cc (91 cubic inches) and weighs around 1.75 kg (3.85 lb). For reference, this is over four times the already aggressive power density requirements for Google's prize.

Sandia Evaluates Powerful Batteries for Modular Grid Energy Storage

[Energy Manager Today, Oct. 29] Sandia National Laboratories has begun lab-based characterization of TransPower's GridSaver, the largest grid energy storage system analyzed at Sandia's Energy Storage Test Pad in Albuquerque, NM. Sandia will evaluate the 1 MW, lithium-ion grid energy storage system for capacity, power, safety and reliability. The lab also will

investigate the system's frequency regulation, which grid operators need to manage the moment-to-moment differences between electrical supply and demand. Additional tests will help validate Sandia's grid energy storage characterization protocols, which have been developed jointly by industry and the national labs as pre-standards to measure and express energy storage system performance. National, state and local policies that push for a cleaner, more secure electric grid are driving significant increases in variable renewable generation. Storage helps to mitigate that variability.

Will a Breakthrough Solar Technology See the Light of Day?

A startup that might have a record-breaking solar cell is in danger of going out of business.
[MIT Tech Review, Oct. 30] Solar needs to get far cheaper to compete with fossil fuels on a large scale. The power unit is a rectangular slab about the size of a movie theater screen. It's mounted on a thick steel post, and equipped with a tracking mechanism that continuously points it at the sun. The slab is made of over 100,000 small lenses and an equal number of even smaller solar cells, each the size of the tip of a ballpoint pen. This contraption is part of one of the most efficient solar power devices ever made. Semprius, a startup based in Durham, North Carolina, claims that the next generation of this power unit will make solar power the cheapest option for utilities installing new power plants. With fields of over 1,000 of these devices, utilities would produce electricity at less than 5 cents per kilowatt-hour. That is even cheaper than today's least expensive option: a new natural gas plant. The technology originated in the lab of John Rogers, a professor of chemistry and materials science and engineering at the University of Illinois. Semprius has raised $45 million from investors including Siemens, and has set records for solar-cell efficiency—meaning the amount of energy in sunlight that is converted into electricity. This year it demonstrated that it could use a version of its technology to make a novel kind of solar cell that, some believe, could convert half of the energy in sunlight into electricity, about three times better than conventional solar cells. Yet for all the promise of the technology, Semprius is in a tough financial spot. For its technology to be cost-effective, Semprius must scale up the production of its solar cells significantly. Right now it can make enough solar units to produce six megawatts of power per year, but it needs to raise that to at least 200 megawatts. The company is raising $40 million in hopes of doing this. Its current investors say they'll contribute, and for now they're loaning the company money to keep it in business, but they won't do so forever. The company needs a new investor soon. Otherwise it could go under.

LEGISLATION AND REGULATION

1,300 Degrees? No Sweat for Solar Paint

[U-T San Diego, Nov. 1] In a potential breakthrough for the solar energy industry, a San Diego-based research team has developed a light-trapping paint that can endure intense heat for years. The nano-particle material can withstand outdoor temperatures of 750 degrees Celsius (1,380 Fahrenheit) for extended periods without cracking or peeling. The discovery could improve the economic performance of thermal solar towers, which gather heat energy by concentrating sunlight reflected off thousands of optical mirrors. The paint was developed by a research team at the UC San Diego Jacobs School of Engineering and described in two articles in the journal Nano Energy. Inside solar towers, steam or molten salt is heated to extreme temperatures to help propel steam turbines and generate electricity. Peeling paint can reduce efficiencies and prompt costly days-long maintenance outages. To drive down the cost of thermal solar energy, engineers also are striving to run solar towers at higher operating temperatures and conserve that heat to produce power after sundown.

Energy Dept. Expands Efficiency Push to 'Fast-Charging' Power Cords

[The Hill, Nov. 3] The Department of Energy (DOE) is trying to make the power cords that charge computers and cellphones more efficient, the agency said Monday. The Energy Department's Office of Energy Efficiency and Renewable Energy announced it will hold a public meeting later this month to discuss the proposed rules for external power supplies that charge the devices. The agency proposed new efficiency standards for certain fast-charging power cords last month, which will be the topic of discussion at the meeting on Nov. 21. The rules would update the test procedures for these external power supplies to measure their standby and active-mode efficiency.

EPA Releases Additional Information on Clean Power Plan

[PowerMag.com, Oct. 29] The U.S. Environmental Protection Agency (EPA) has released a notice of data availability (NODA)—making additional information and ideas available for public comment—and it has also proposed carbon goals for areas in Indian Country and U.S. territories. Janet McCabe, acting assistant administrator for the EPA's Office of Air and Radiation, explained the two actions related to the Clean Power Plan to media members during a conference call on

Oct. 28. She noted that both of the actions are routine steps in the course of federal rulemaking. McCabe said the NODA "discusses a few issues and ideas that stakeholders have raised about the Clean Power Plan, so that all stakeholders and the public can consider these ideas when commenting on the proposal." Specifically, the NODA includes additional information on three topic areas: the emission reduction compliance trajectories created by the interim goal for 2020 to 2029, certain aspects of the building block methodology, and the way state-specific carbon dioxide goals are calculated.

History of U.S. Biofuel Mandate Provides Opening for Legal Challenge

[Reuters, Oct. 30] WASHINGTON – Probable legal challenges to proposed cuts in the 2014 U.S. biofuel mandate could focus on a two-word phrase dropped from the U.S. law establishing the renewable fuel program back in 2005: distribution capacity. Biofuel producers have argued for months that the Environmental Protection Agency's justification for potential cuts to 2014 targets is incompatible with federal law and that the legislative history of the mandate will prove this. A bill passed by U.S. House of Representatives in April 2005 that created the Renewable Fuel Standard included a clause allowing the EPA to lower the targets contained in the statute if it deems there is "inadequate domestic supply or distribution capacity." But, the final law dropped the term "distribution capacity." The omission could be the crux of a fight over how the EPA can administer the program going forward, because the agency based its 2014 proposal on a shortage of fuel pumps able to dispense higher blends of ethanol in gasoline. Bob Dinneen, now president of the Renewable Fuels Association, advocated for the biofuel industry in 2005. He said the phrase was intentionally deleted from the law.

U.S. Fines Automakers Hyundai and Kia for Misstating Mileage

[New York Times, Nov. 3] The Korean automakers Hyundai Motor and Kia Motors will pay the federal government a combined $300 million in penalties as part of a settlement for overstating vehicle fuel-economy standards on 1.2 vehicles, the Justice Department and the Environmental Protection Agency announced on Monday. The penalty is the largest ever for a violation of the Clean Air Act, government officials said. Under the agreement, the automakers will pay $100 million in fines and forfeit an estimated $200 million in greenhouse gas emissions credits, which auto companies earn by building vehicles with lower emissions than are required by law.
"This type of conduct quite simply will not be tolerated," Attorney General Eric H. Holder Jr., said at a joint news conference at the Justice Department with Gina McCarthy, the E.P.A. administrator. The Justice Department, he added, "will never rest or waver in our determination to take action against any company that engages in such activities." Ms. McCarthy said that the action reinforced her agency's determination to uphold the Clean Air Act. "Businesses that play by the rules shouldn't have to compete with those breaking the law," she said.

WESTERN POWER

3 California Counties Voting On Fracking Bans

[Associated Press, Oct. 31] SAN FRANCISCO — Voters in three coastal California counties vote Tuesday on whether to ban fracking and other intensive oil production, even as slumping prices globally are leading companies to start to scale back on production. Chevron, ExxonMobil and other oil companies have donated about $7 million to try to defeat the fracking bans in Santa Barbara, San Benito and Monterey counties. In Santa Barbara and San Benito counties, the ballot measures would ban not only fracking — a method of injecting water and chemicals into rock at high pressure to force out oil — but one of the most commonly used drilling methods in the state, steam injection. None of the three counties currently are known to host onshore fracking. That has led some opponents of the fracking bans to argue the vote is no more necessary than banning ice-fishing in the temperate, coastal counties.

Denver Launches Project To Save $1.3B in Energy

[Energy Manager Today, Oct. 30] The city of Denver, Colo., has launched the Denver City Energy Project, a plan to unlock $1.3 billion in energy savings from commercial and multi-family buildings. So far, 57 building owners have committed to benchmarking and measuring their performance. The buildings are using Energy Star Portfolio Manager to benchmark their performance and are sharing the results with the city. In addition to the participating buildings, project partners include Denver Metro Building Owners and Managers Association (BOMA), Xcel Energy, the International Facility Management Association Denver Chapter and the Energy Efficiency Business Coalition. In exchange for their commitment to benchmark, Denver City Energy Project participants receive formal recognition, training on how to benchmark and improve building efficiency and assistance in engaging building occupants in improving building performance. Data gathered through benchmarking can help guide energy efficiency improvements and establish a continuous cycle of improvement. Research has shown that

building owners who benchmark their buildings are more likely to make energy efficiency improvements, and on average, benchmarked buildings reduce energy use by 7 percent over three years. The city of Denver has benchmarked more than 7 million square feet of municipal buildings and pledged to reduce energy use 20 percent by 2020.

UC, Mexico Sign Memorandum of Understanding on Renewable Energy

[The Californian, Oct. 31] UC President Janet Napolitano and the Mexican Secretariat of Energy, or SENER, signed a memorandum of understanding regarding the development of renewable energy between the University of California and Mexico on Thursday at the Lawrence Berkeley National Laboratory. The memorandum of understanding, or MOU, outlines the nature and scope of collaboration between the university and SENER for the next five years. This includes research; visits from scholars, scientists and administrators, and development of graduate programs in the field of renewable energy. This MOU is part of the larger UC-Mexico Initiative based in UC Riverside that Napolitano launched in January to strengthen collaboration between the university and Mexico. The initiative aims to unify existing UC programs and partnerships in Mexico, such as education abroad and research partnerships, as well as prompt the development of new programs.

Wyoming Wind on the Long Trail West

Two large-scale transmission projects are aiming to connect the power from the excellent wind resources of Wyoming, the US's least populous state, to the needs of California, the most populous, where there is a huge requirement for renewables-generated electricity.

[Windpower Monthly, Nov. 1] Two major private transmission lines are proposed to move wind power from windy Wyoming (population 583,000) to power-hungry California (population 38.3 million). TransWest Express (TWE) and Zephyr are each backed by a tenacious company with deep pockets. But it is unclear if both of the high-voltage direct-current (HVDC) lines will be built because of the inherent risk of such multi-billion-dollar projects and the politics of California importing electricity. The more advanced of the two is TWE, which would ship 3GW of wind power from Wyoming, across Colorado, Utah and Nevada to an interconnection near Las Vegas to help power the Los Angeles area and other south-western desert areas. First proposed in 2005, the $3 billion project is well into the development process. TransWest Express, backed by Colorado-based conglomerate the Anschutz Corporation, is aiming for the project to be completed before 2020, when California's renewable portfolio standard (RPS) requires the state's major utilities to source 33% of their electricity from renewable sources. Crucially, the 3GW Chokecherry and Sierra Madre wind project in Wyoming, which was consented in August and is set to start construction by the end of the year, is also backed by Anschutz, headed by conservative Denver billionaire Philip Anschutz. The transmission and wind projects are not dependent upon each other, insists TWE, but they are obviously complementary. The next few months are vital. Two thirds of the entire 725-mile (1,167 kilometres) overhead line would be on federal or public land. The Bureau of Land Management (BLM) and the Western Area Power Administration (WAPA), the lead federal agencies for consenting the project, are expected to release the final environmental impact statement in the first quarter of 2015. The report is expected to green-light the project - as the draft report did - and will determine the exact route. WAPA, part of the US Department of Energy (DOE), is a joint development partner. The government agency, which markets and transmits federally-produced hydro power, and TWE are each investing up to $25 million. WAPA may later decide to own 50% of the line, says Kara Choquette, TWE's director of communications.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program

- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News
  DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Energy for Sustainability – Current Closing Date for Applications: Nov. 5, 2014
- Assisting Federal Facilities with Energy Conservation Technologies, Fiscal Year 2015
  Close Date: 11/13/2014 Funding Number: DE-FOA-0001203
- National Robotics Initiative - Response due Nov. 13, 2014
- Transportation Energy Resources From Renewable Agriculture (TERRA)
  Close Date: Nov. 17, 2014 Applicants are strongly encouraged to submit their applications at least 48 hours in advance of the submission.
- Nuclear Energy University Programs - Fellowship and Scholarship – Response due Nov. 30, 2015
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 Expiration Date: Nov. 30, 2016
- NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 - Close Date: Dec. 11, 2014
- Targeted Algal Biofuels and Bioproducts (TABB) - Dec 15, 2014 Submission Deadline for Concept Papers: 10/30/2014 at 5:00 P.M. Eastern Standard Time Submission Deadline for Full Applications: 12/15/2014 at 5:00 P.M. Eastern Standard Time
- Jobs Plus Pilot Program - This Notice of Funding Availability (NOFA) announces the availability of funding of approximately $24 million for the Jobs Plus Pilot program for Public Housing Agencies (PHAs) to develop locally-based approaches to increase earnings and advance employment outcomes for Public Housing residents. The NOFA will fund initiatives to improve employment and earnings outcomes for Public Housing residents through supports such as work readiness, employer linkages, job placement and financial literacy. Of the $24 million available, $9 million is made available from the ROSS appropriations to support the services element of the Jobs-Plus Pilot program.

Funding Opportunity Number: FR-5800-N-24 Deadline Date: December 17, 2014

- Buildings Energy Efficiency Frontier & Innovation Technologies (BENEFIT) - 2015
  Close Date: 01/12/2015 Funding Number: DE-FOA-0001166
  Landscape Design for Sustainable Bioenergy Systems Department of Energy
  Close Date: 01/12/2015
- Solid-State Lighting Advanced Technology Research and Development 2015
  Close Date: 01/15/2015
- Advancing Solutions to Improve the Energy Efficiency of U.S. Commercial Buildings
  Close Date: 01/20/2015
- Wood Innovations Close Date: 1/23/2015
- Sustainable and Holistic Integration of Energy Storage and Solar PV (SHINES)
  Close Date: 3/19/15
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants - Ongoing
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus – Ongoing
- National Science Foundation Funding Opportunities